wherein said first bump unit includes a plurality of bumps that are disposed a first distance apart from each other, and

wherein said first bump unit radiates heat from said semiconductor device; and

a second bump unit formed in said peripheral area of said back surface,

wherein said second bump unit includes a plurality of bumps that are disposed a second distance apart from each other, said second distance is greater than said first distance, and said second distance is less than a third distance between said central area and said peripheral area, and

wherein said second bump unit transmits signals.

26. (Amended) A semiconductor device, comprising:

a substrate having a main surface and a back surface, the back surface having a central area, an intermediate area in which no bumps are disposed, surrounding the central area, and a peripheral area surrounding the intermediate area;

a semiconductor chip disposed on the main surface;

a first bump unit disposed in the central area of the back surface to radiate heat from the semiconductor device, the first bump unit including a plurality of bumps disposed a first distance apart from each other; and

a second bump unit formed in the peripheral area of the back surface for transmitting signals, the second bump unit including a plurality of bumps disposed a second distance apart from each other, the second distance being greater than the first distance and less than a third distance between the central area and the peripheral area,

wherein the first and second distances are set such that upon application of a heat treatment to the device, the bumps of the first bump unit melt so as to become connected and fuse to each other as a unitary body and the bumps of the second bump unit melt and remain apart from each other.

28. (Thrice Amended) A semiconductor device, comprising:

a substrate having a main surface and a back surface, the back surface having a central area, an intermediate area in which no bumps are disposed, surrounding the central

area, and a peripheral area surrounding the intermediate area;

a semiconductor chip disposed on the main surface;

a first bump unit disposed in the central area of the back surface to radiate heat from the semiconductor device, the first bump unit including a plurality of bumps disposed a first distance apart from each other; and

a second bump unit formed in the peripheral area of the back surface for transmitting signals, the second bump unit including a plurality of bumps disposed a second distance apart from each other sufficient to assure that upon application of a heat treatment to the device causing the bumps of the first and second bump units to melt, the bumps of the second bump unit remain apart from each other, the second distance being greater than the first distance and less than a width of the intermediate area;

wherein the bumps of the first bump unit are sufficiently close to each other that upon the application of the heat treatment to the device, the bumps of the first bump unit fuse into a unitary body.